

**PROCEDURES FOR THE VERIFICATION AND
CALIBRATION OF LIQUID LIMIT DEVICE AND BRASS
CUP
AASHTO T 89**

A. PURPOSE

These procedures are intended to provide instruction in the verification of critical dimensions of the liquid limit device and the correct adjustment of the height of the drop of the brass cup.

B. APPARATUS REQUIRED

1. Calipers calibrated and readable to 0.001 inch (.025 mm)
2. Calibration block 0.386 - 0.402 inch (9.8 – 10.2 mm) thick
3. Masking Tape
4. Carbon Paper
5. Stop Watch

C. PROCEDURE

1. Measure thickness, length, and width of base of liquid limit device to nearest 0.001 inch (.025 mm) and record.
2. Measure depth of brass cup to nearest 0.001 inch (.025 mm) and record results.
3. Measure brass cup at four (4) points at 90° from each other and record results.
4. Check the number of drops per minute with stop watch and record results.
5. Check the height of drop of the brass cup as described in AASHTO Test Method T 89, Section 42 and Note 2. (Adjust as needed.)

D. TOLERANCE

Liquid limit devices shall meet the requirements specified in AASHTO Test Method T 89.

EQUIPMENT VERIFICATION RECORD

Verified By: _____	Date: _____
Equipment: <u>Liquid limit device (Brass cup)</u>	Location (Lab): _____
Identification No.: _____	Verification Frequency: <u>12 months</u>
Previous Verification Date: _____	Next Due Date: _____
Verification Equipment Used: Calipers (readable to 0.001 in.[.025 mm]), SN: _____ Masking tape Carbon Paper	
Verification Procedure: <u>(In-house) OMR-CVP-9 / AASHTO T 89</u>	

LIQUID LIMIT DEVICE

Maker: _____

Hand operated? Yes / No

Electric? (speed 1.9-2.1 drops per second/114-126 drops per minute) No. of drops: _____

Base hard rubber? Yes / No

Base dimensions:	Width 4.72 in.-5.12 in. (120 – 130 mm)	Measured Width: _____
	Length 5.70 in.-6.10 in. (145 – 155 mm)	Measured Length: _____
	Height 1.77 in.-2.17 in. (45 – 55 mm)	Measured Height: _____

Base has four feet of resilient material? Yes / No

Brass dish? Yes / No

Dish thickness Acceptable 0.075 in.-0.083 in. (1.9 – 2.1 mm) Measured Thickness: _____

Dish depth: Acceptable 1.023 in.-1.130 in. (26 mm – 28 mm) Measured Depth: _____

Little or no groove in dish? Yes / No

Rim not too worn (at least ½ original rim thickness remains)? Yes / No

No wobble on rise? Yes / No

Cam follower attached to cup and in good condition? Yes / No

Area of contact on base or cup no more than 0.5 in.? Yes / No